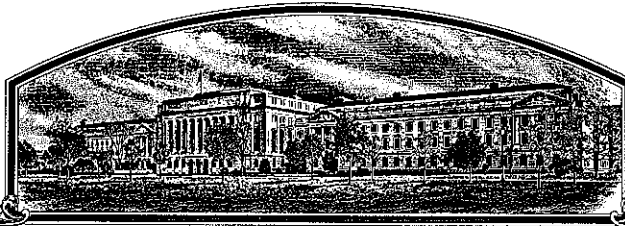


No.



9300208

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

*Asgrow Seed Company*

Whereas, THERE HAS BEEN PRESENTED TO THE  
**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT OF 1930, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'A2540'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 29th day of September in the year of our Lord one thousand nine hundred and ninety-five.

Attest:

*Mrs. A. A. Stinson*

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Samuel J. H. [Signature]*  
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1 NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2 TEMPORARY DESIGNATION OR EXPERIMENTAL NO	3 VARIETY NAME
ASGROW SEED COMPANY		XP2540	A2540
4 ADDRESS (street and no. or R.F.D. no., city, state, and ZIP)		5 PHONE (include area code)	<b>FOR OFFICIAL USE ONLY</b> PVPO NUMBER 9300208 F I L I N G Date May 10, 1993 Time <input type="checkbox"/> A.M. <input type="checkbox"/> P.M. F E E S Filing and Examination Fee \$2325.00 Date May 7, 1993 R E C E I V E D Certificate Fee \$275.00 Date Aug. 15, 1995
9638-190-23 Gull Road, Building 190 Kalamazoo, MI 49001		616-384-2351	
6 GENUS AND SPECIES NAME	7 FAMILY NAME (Botanical)	8 CROP KIND NAME (Common Name)	
Glycine max	Leguminosae	soybean	
9 DATE OF DETERMINATION			
Sept. 1938			
10 IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)			
corporation			
11 IF INCORPORATED, GIVE STATE OF INCORPORATION		12 DATE OF INCORPORATION	
Delaware		March 22, 1968	
13 NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			
Wayne Hoener, Asgrow Seed Company, 9638-190-23, Gull Rd., Bldg. 190, Kalamazoo, MI 49001 616-384-2351 Alan Walker, Asgrow Seed Company, 5926 Hwy. 14E, Janesville, WI 53546 608-755-1777			

14 CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

a. ☒ Exhibit A. Origin and Breeding History of the Variety

b. ☒ Exhibit B. Novelty Statement

c. ☒ Exhibit C. Objective Description of Variety

d. ☒ Exhibit D. Additional Description of Variety

e. ☒ Exhibit E. Statement of the Basis of Applicant's Ownership

f. ☒ Seed Sample (2,500 viable untreated seeds) Date Seed Sample mailed to Plant Variety Protection Office \_\_\_\_\_

g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States"

15 DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 63(a) of the Plant Variety Protection Act)

☐ YES (If "YES" answer items 16 and 17 below) ☒ NO (If "NO" skip to item 18 below)

16 DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

☐ YES ☒ NO

17 IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18 DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?

☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act Give date \_\_\_\_\_)

☒ NO

19 HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?

☐ YES (If "YES," give names of countries and dates)

☒ NO

20 The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s))	CAPACITY OR TITLE	DATE
<i>Wayne Hoener</i>	<i>Soybean Prod. Mgr.</i>	4/14/93
SIGNATURE OF APPLICANT (Owner(s))	CAPACITY OR TITLE	DATE
<i>Alan K. Walker</i>	<i>Director of Soybean Research</i>	4-14-93

**EXHIBIT A**

**Origin and Breeding History of A2540**

**Pedigree:** A3307/85V250-08  
85V250-08 = experimental strain with parentage MO203/A2943

1985 Cross made at Oxford, Indiana.

1985/86 F<sub>1</sub> plants grown in winter nursery at Isabela, Puerto Rico.  
  
Population advanced from F<sub>2</sub> to F<sub>4</sub> via modified single seed descent.

1987 F<sub>5</sub> bulk population grown at Oxford, Indiana from which individual plants were selected and harvested.

1988 F<sub>5</sub> derived F<sub>6</sub> progeny rows grown at Oxford, Indiana and selected on the basis of maturity and appearance.  
  
B85403 IP9-03399 was determined to be stable line in September 1988.

1988/89 Seed of B85403 IP9-03399 was increased in winter nursery at Isabela, Puerto Rico.

1989 B85403 IP9-03399 was entered in yield test 89P269 as entry 07 at three locations in Indiana and Illinois.

1990 B85403 IP9-03399 was entered in yield test 0HN297 as entry 19 at eight locations in four states.  
  
Individual F<sub>5,9</sub> plants harvested and threshed separately.

1990/91 Purification rows grown in winter nursery at Isabela, Puerto Rico. Uniform pure rows bulked to form breeders seed.

1991 B85403 IP9-03399 was entered in yield test 11N297 as entry 09 at seven locations in three states and given the experimental designation XX25A0.  
  
Breeders seed planted at Perry, Iowa to produce 148 50-lb. units of basic seed.

1992 XX25A0 was entered in yield tests 2WV201 (24 locations in eight states) and 2FN230 (13 locations in six states) as entries 07 and 01, respectively and given the experimental designation XP2540.  
  
Basic seed planted at Perry and Clarion, Iowa to multiply seedstock.  
  
XP2540 was nominated for release and full production and assigned the designation A2540.

Yield trials from 1989 to 1992 and seed production in 1991 and 1992 indicate A2540 is uniform and stable. As with other soybean varieties, variants can occur for almost any character during the course of repeated sexual reproduction.

## EXHIBIT B

### Novelty Statement Concerning A2540 Soybean

To our knowledge the soybean varieties that most closely resemble A2540 are A2396, A2427, and A2543.

1. Flower Color:	A2540	White
	A2396	Purple
	A2427	Purple
	A2543	Purple
2. Pubescence Color:	A2540	Grey
	A2396	Grey
	A2427	Grey
	A2543	Tawny
3. Pod Wall Color:	A2540	Tan
	A2396	Brown
	A2427	Brown
	A2543	Tan
4. Hilum Color:	A2540	Buff
	A2396	Imperfect Black
	A2427	Imperfect Black
	A2543	Black

#### 5. Reaction to races of *Phytophthora megasperma f. sp. glycinea*:

	Race											
	1	3	4	5	7	8	9	13	16	17	21	25
A2540	S	S	S	S	S	S	S	S	S	S	S	S
A2396	R	S	S	S	S	S	S	R	R	R	S	S
A2427	R	S	S	S	S	S	S	R	R	R	S	S
A2543	R	R	R	R	R	R	R	S	S	R	R	S

#### 6. Reaction to race 3 of Soybean Cyst Nematode (*Heterodera glycines*).

A2540	Resistant
A2396	Susceptible
A2427	Resistant
A2543	Susceptible

U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION  
 PLANT VARIETY PROTECTION OFFICE  
 BELTSVILLE, MARYLAND 20705

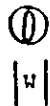
EXHIBIT C  
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY  
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) ASGROW SEED COMPANY	TEMPORARY DESIGNATION XP2540	VARIETY NAME A2540
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 9638-190-23 Gull Road, Building 190 Kalamazoc, MI 49001		FOR OFFICIAL USE ONLY PVPO NUMBER 9300208

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,  ). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

## 1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)  
 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)  
 4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

## ★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow      2 = Green      3 = Brown      4 = Black      5 = Other (Specify) \_\_\_\_\_

## 3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')      2 = Shiny ('Nebsoy'; 'Gasoy 17')

## ★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

## ★ 5. HILUM COLOR: (Mature Seed)

1 = Buff      2 = Yellow      3 = Brown      4 = Gray      5 = Imperfect Black      6 = Black      7 = Other (Specify) \_\_\_\_\_

## ★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow      2 = Green

## ★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low      2 = High

## ★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1<sup>a</sup>)      2 = Type B (SP1<sup>b</sup>)

## ★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')      2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')  
 3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')  
 4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

## ★ 10. LEAFLET SHAPE:

1 = Lanceolate      2 = Oval      3 = Ovate      4 = Other (Specify) \_\_\_\_\_

4

## 11. LEAFLET SIZE:

☐ 21 = Small ('Amsoy 71'; 'A5312')  
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

## 12. LEAF COLOR:

☐ 21 = Light Green ('Weber'; 'York')  
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

## ★ 13. FLOWER COLOR:

☐ 1

1 = White

2 = Purple

3 = White with purple throat

## ★ 14. POD COLOR:

☐ 1

1 = Tan

2 = Brown

3 = Black

## ★ 15. PLANT PUBESCENCE COLOR:

☐ 1

1 = Gray

2 = Brown (Tawny)

## 16. PLANT TYPES:

☐ 11 = Slender ('Essex'; 'Amsoy 71')  
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

## ★ 17. PLANT HABIT:

☐ 3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

## ★ 18. MATURITY GROUP:

☐ 0 5

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

## ★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

## BACTERIAL DISEASES:

★

☐ 0Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★

☐ 0Bacterial Blight (*Pseudomonas glycinea*)

★

☐ 0Wildfire (*Pseudomonas tabaci*)

## FUNGAL DISEASES:

★

☐ 0Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojae*)

★

☐ 0

Race 1

☐ 0

Race 2

☐ 0

Race 3

☐ 0

Race 4

☐ 0

Race 5

☐ 0

Other (Specify)

☐ 0Target Spot (*Corynespora cassicola*)☐ 0Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 0Powdery Mildew (*Microsphaera diffusa*)

★

☐ 0Brown Stem Rot (*Cephalosporium gregatum*)☐ 0Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

## FUNGAL DISEASES: (Continued)

- ★ ☐ 0 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)
- ☐ 0 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ 1 Race 1 ☐ 0 Race 2 ☐ 1 Race 3 ☐ 1 Race 4 ☐ 0 Race 5 ☐ 0 Race 6 ☐ 0 Race 7
- ☐ 0 Race 8 ☐ 0 Race 9 ☐ 0 Other (Specify) \_\_\_\_\_

## VIRAL DISEASES:

- ☐ 0 Bud Blight (Tobacco Ringspot Virus)
- ☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 0 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 0 Seed Mottle (Soybean Mosaic Virus)

## NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☐ 2 Race 3 ☐ 0 Race 4 ☐ 2 Other (Specify) Race 14
- ☐ 0 Lance Nematode (*Hoplolaimus Colonus*)
- ★ ☐ 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne hapla*)
- ☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ 0 OTHER DISEASE NOT ON FORM (Specify): \_\_\_\_\_

## 20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ 1 Iron Chlorosis on Calcareous Soil
- ☐ 0 Other (Specify) \_\_\_\_\_

## 21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ 0 Other (Specify) \_\_\_\_\_

## 22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	A2396	Seed Coat Luster	A3322
Leaf Shape	A2396	Seed Size	A2396
Leaf Color	A2396	Seed Shape	A2396
Leaf Size	A2396	Seedling Pigmentation	A3322

## 23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
Submitted A2540	136	1.8	88			42.7	19.8	12.4	2.6
Name of Similar Variety A2396	131	1.9	89			41.0	20.6	13.3	2.6

## PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.



## EXHIBIT D

### Additional Description of the Variety

A2540 is a mid maturity group II soybean cultivar that matures one day later than A2427 and is resistant to races 3 and 14 of soybean cyst nematode. A2540 also has improved iron deficiency chlorosis resistance compared to A2427 and is adapted to northern Ohio, northern Indiana, northern Illinois, southern Michigan, central and northern Iowa, and northeastern Nebraska (especially where soybean cyst nematode is present). A2540 is characterized by excellent standability, indeterminate plant type, ovate leaves, white flowers, grey pubescence, buff hila, tan pod walls, and dull seed coat luster.

## EXHIBIT E

### Statement of Basis of Applicant Ownership

A2540 was originated and developed by Dr. E. H. Paschal II, Asgrow plant breeder. By agreement between Asgrow Seed Company, all rights to any invention, discovery or development made by employees are assigned to the company. No rights of such invention, discovery or development are retained by the employee.